

**REMARKS**

This paper responds to the Office Action mailed January 5, 2004 with reference to the above identified application.

Claims 1 – 18 are pending in this application.

Method and computer program claims 10-13, 17 and 18 are allowed. Apparatus claims 1-9 and 14-16 are rejected under 35 USC 102(b) as anticipated by Vanoli (US 5 712 716). Reconsideration is requested.

The apparatus claims in the instant application each require analysis of signal levels both at and in-between the channel frequencies. It is known to use these inter-channel signal measurements in order to provide an interpolated value of the noise level, as described at page 8 lines 12 –15 of the instant application.

According to the instant invention, these measurements are carried out upstream and downstream of a node of the network, and enable noise shaping in the node to be taken into account when carrying out signal to noise calculations further downstream of the node.

As explained with reference to Figure 2, the signal level measurements in-between channel frequencies enable the signal levels B, D and F to be determined, in known manner. By taking these measurements upstream and downstream of a node of the network, the invention enables the signal level F' to be determined, which enables a more accurate determination of signal to noise ratio further downstream of the node (at the amplifier 24d in this example).

All independent apparatus claims require the signal level data for channel frequencies and in-between channel frequencies to be obtained at locations

immediately downstream of a node and immediately upstream of the node. This enables the noise shaping introduced by the node to be accurately determined and taken into account in any signal to noise analysis further downstream.

The use of signal measurements between the channel frequencies is discussed in Vanoli at column 17 lines 39-52. In Vanoli, these measurements are first used to locate the exact value of the channel frequency, as explained at column 17 lines 53-63.

The use of the interpolated noise level in determining the signal to noise ratio is explained at column 19 lines 18-35 of Vanoli. Vanoli uses these measurements to provide an interpolated value of the noise level, in the same way as explained at page 8 lines 12-15 of the instant application.

In Vanoli, the signal to noise ratio is based on the single interpolated noise level and the signal level at the determined channel frequency. Vanoli cannot therefore take account of noise shaping which has taken place in a previous node in the network.

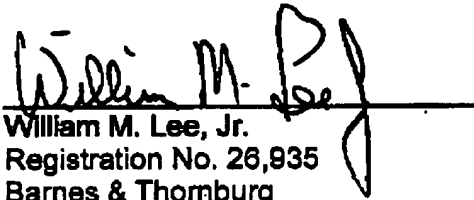
Vanoli fails to disclose or suggest the monitoring of channel and inter-channel signal levels upstream and downstream of a node and the use of these signal levels in determining an accurate signal to noise measurement further downstream of the node. There is no disclosure or suggestion of taking into account noise shaping through a node when calculating signal to noise ratio.

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In view of the remarks above, it is therefore respectfully submitted that this application is fully in order for allowance, and such action is therefore solicited.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "William M. Lee, Jr.", is written over a horizontal line.

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